



ENERGY AND TRANSPORTATION

Fort Carson 25-Year Goals for Energy and Transportation

Attendees of the Fort Carson Installation Sustainability Workshop, which convened on 4-6 September 02, developed the following long-range goals:

Sustain all facility and mobility systems from renewable sources with the capacity to generate all facility energy on post.

Reduce automobile dependency, and provide balanced land use and transportation systems.

The primary issues and goals discussed in the Energy and Transportation working group are described below. This information will be helpful in developing the short-term objectives and five-year plans needed to reach the long-range goals.

Breakout Group Membership

Facilitator: Mr. David Eady

Recorder: Ms. T.L. Griffin

Name	Organization
Bulmaro Aguilera	Fort Carson – DPW
Sally Atkins	Fort Carson – Air Program Manager
Tom Brown	Retired Military
Scott Clark	DECAM – Energy Engineer
Diana Dean	Colorado Springs Utilities – Senior Project Engineer
Carlos de Aguilar	DECAM – ECD Chief
Doug Ellsworth	CERL – Assistant Technical Director
Mike Felschow	City of Colorado Springs – Transportation Planner
John Gonzales	Natural Fuels Company – Market Manager
Al Hepford	DCA – Chief Operations
Irina Johnson	Fort Bragg – Transportation Planner
Randy Jones	DOE, Denver Regional Office
Matt Junko	Fort Carson – 3 rd ACR
K.C. Kuykendall	Fort Carson – LB&B, Analyst
Danny Morales	Fort Carson – 10 th SFG (Airborne)
Tim Powers	Fort Campbell – Environmental Chief
Ray Reilly	Pacific NW National Laboratory (PNNL)
Bob Smith	Natural Fuels Company – General Manager
Garold Smith	Wilson & Co. – Environmental Planner



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Van Truan	Corps of Engineers – Regulatory Branch
Ed Whitcraft	DPW
Kelly Whitlow	Fort Carson – 43d ASG
Efrem Williamson	Fort Carson – HHC, USAG
Jude	El Paso County

List of Issues and Potential Responses to Issues

Education

- Fort Carson does not train/educate its master planners or engineers to think in terms of the future.
- The current renewable energy perception is that it's not cost effective.
- People's desire for land and space needs to change.
- There is a lack of public energy conservation advertising.
- There is a need to conserve, which should be communicated.

Facility Efficiency

- Facilities at Fort Carson are not designed to be energy efficient.
- Fort Carson does not use updated/futuristic design methods for new construction.
- Currently money is only allocated for maintenance/repair; won't allocate money for future operation
- Infrastructure must be upgraded or replaced to continue to provide service (both energy and transportation)
- We don't construct energy efficient buildings by using redesign criteria.
- Buildings are not built/renovated to greatest possible efficiency.
- Buildings first cost constrained; efficiency is first to go!
- Energy inefficiency with construction and inefficient energy use
- Use of old, inefficient heating/cooling systems for buildings
- Facility construction without significant environmental considerations
- Investment ratio in new technologies must increase.
- Electricity usage

Controls

- Central heating/cooling is wasteful. Every office and room needs to have its own thermostat.
- Intelligent control systems must be employed to optimize scarce energy resources.
- Leaving unused items running, like computers, lights, coffee makers, etc., is a problem.

Transportation Use

- Fort Carson needs to encourage use of mass transit with clean fuels.
- Fort Carson needs to adopt schedules to reduce vehicle emissions (10 hr/4 days).
- Innovative materials and placement must be used to provide sustainable transportation systems.
- Average daily commute is approximately 60+ miles.



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- There is a lack of regional partnership for alternative/MOV (multiple occupancy vehicles) transportation systems.
- Americans love their cars and don't want to give them up.
- People need to reduce vehicle miles traveled to reduce emissions/consumption.
- There are more vehicles than roadways can handle.
- The use of fossil fuel powered vehicles for daily commute to work is a problem.

Transportation Efficiency

- There is a lack of fuel efficient vehicles.
- We need to maximize all sources of fossil fuels for future needs.
- We are depleting extra energy using old equipment (like M1 tanks).
- Gasoline/fuel consumption is a problem.
- Equipment and vehicles cause lots of emissions.
- Fort Carson has an energy inefficient vehicle fleet. Also, indirect energy costs from polluting activities should be considered.
- Fort Carson should let current contract expire on GSA vehicles and get hybrid vehicles or bio-fuel vehicles.

Land Use

- Different zoning ordinance (high density and mixed land use) will decrease number of vehicles.
- We need to control urban expansion!
- Urbanization, etc. might impede transportation system ability to project force?
- We cannot continue building without major transportation corridors constructed.

Water

- There is too much water consumption.
- Fort Carson doesn't use astro-turf on its golf course nor use xeriscaping.
- Water shortage/drought is a problem for growth/expansion of the military.

Process

- Contracts are not written to provide incentive for sustainability.
- Forces Command funding cycles prevent sustainable practices.
- The current process does not depend on private utilities, privatize, or enter into partnerships (provide incentive).
- There needs to be strict penalties for energy violations.
- Fort Carson should modify/amend its contracts for construction of additional housing – to include that construction must be energy efficient.
- Life-cycle costing and activity-based costing needs to be implemented.
- Army environmental budget/funding needs to change. Currently, the focus is on compliance (high priority). It needs to be funding beyond compliance.
- Current means of financing energy projects needs to change to allow for installations to retain and use all savings.



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- The city isn't charging the "true" price for energy.

Generation Sources

- There are very little distributed energy resources on Fort Carson.
- There needs to be a major reduction in energy use.
- Fort Carson does not use alternate energy sources that are available.
- There is over dependence on fossil and nuclear fuels.
- There is a high use of non-renewable energy sources.
- Fort Carson doesn't have alternate sources of electrical power.
- There is a high reliance on fossil fuels and a low usage of CNG facility.
- Fort Carson is too reliant on coal to produce electricity.
- Fort Carson relies on fossil fuel-based energy.
- We need to reduce our dependence on imported oil.

Initial Goals and Proponents Developed

Initial Strategic Goal 1

- **Issue:** Dependence on fossil fuels, adverse air emissions, funding for life cycle costs, reliance on petroleum imports.
- **Desired End State:** All energy used for facility and mobility systems on Fort Carson comes from renewable sources.
- **Metric:** 100%
- **Timeframe:** 2027
- **Proponent Organization:** DPW, DOL

Initial Strategic Goal 2

- **Issue:** Dependence on fossil fuels, costs, overall energy consumption, adverse air emissions, climate change, inefficient design/construction/O&M.
- **Desired End State:** Increase Fort Carson's energy efficiency
- **Metric:** 85%
- **Timeframe:** 2027
- **Proponent Organization:** DPW, DECAM, DOL

Initial Strategic Goal 3

- **Issue:** Number of trips on/off-post, time for travel, adverse air emissions, reliance on single modes of transportation, sprawl.
- **Desired End State:** Reduce automobile dependency, and provide balanced transportation systems.
- **Metric:** 20% per capita reduction in vehicle miles traveled; 20% of total trips using alternative sources.
- **Timeframe:** 2027
- **Proponent Organization:** GC



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Final Goals and Team Members

Final Energy Goal

Sustain all facility and mobility systems from renewable sources with the capacity to generate all facility energy on post.

- **Issue:** Dependence on fossil fuels, adverse air emissions, funding for life cycle costs, reliance on petroleum imports, vulnerability.
- **Desired End State:** Secure sustainable energy resources for Fort Carson
- **Metric:** 100%
- **Timeframe:** Mission essential by 2015; All by 2027
- **Proponent Organization:** DPW
- **Team Members:**
 - Colorado Springs Utilities
 - DECAM
 - Regulatory Agencies
 - CERL and other research laboratories
 - DOE/FEMP
 - Pikes Peak Energy Council
 - Regional Installation Management Directorate
 - PPACG – Pikes Peak Area Council of Governments
 - Other DOD Installations
 - Western Regional Environmental Office



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Final Transportation Goal

Reduce automobile dependency, and provide balanced land use and transportation systems.

- **Issue:** Lack of viable alternatives for single occupancy vehicles, and number of trips on/off-post, time for travel, adverse air emissions, sprawl.
- **Desired End State:** Enhance quality of life and support rapid deployment.
- **Metric:** 20% per capita reduction in vehicle miles traveled on post by 2015, and 40% by 2027; 20% of total trips on post using alternative modes by 2015, and 40% by 2027; alternative mode network in place by 2015
- **Timeframe:** 2027
- **Proponent Organization:** DOL
- **Team Members:**
 - DPW
 - DCA
 - DECAM
 - Provost Marshall
 - PPACG
 - Strategic Planning Office
 - Military Unit Representatives
 - Clean Cities Coalition
 - Western Regional Environmental Office
 - DOT
 - Transit Agency